## CLAIMS

We claim:

1. A method of producing a bipolar fuel cell electrode, comprising:

coating a first side of a collector with a first active material having a first porosity;

compressing the coated first side of the collector at a first pressure;

coating a second side of the collector opposite the first side with a second active material having a second porosity; and

compressing the coated second side of the collector at a second pressure to form a bipolar cell electrode

2. The method according to claim 1, wherein the first pressure is greater than the second pressure.

3. The method according to claim 1, wherein the first pressure is from about 200 to about 600 MPa.

4. The method according to claim 1, wherein the second pressure is from about 10 to about 200 MPa.

5. The method according to claim 1, wherein the first active material coating exhibits a porosity of about 35% to about 45% after compressing the coated collector at the first pressure.

6. The method according to claim 1, wherein the second active material coating exhibits a porosity of about 30% to about 40% after compressing the coated collector at the second pressure.

7. The method according to claim 1, wherein the first active material comprises an anode type active material.

8. The method according to claim 7, wherein the an anode type active material comprises one or more of the group consisting of lithium metal, lithium alloys, complex oxides of lithium and transition metal elements, metal oxides, and carbon.

9. The method according to claim 1, wherein the first active material further comprises a conductivity enhancement additive.

10. The method according to claim 9, wherein the conductivity enhancement additive is selected from one or more of the group consisting of acetylene black, carbon black, and graphite.

11. The method according to claim 1, wherein the first active material further comprises a binder.

12. The method according to claim 11, wherein the binder is selected from the group consisting of polyvinylidene fluoride and styrene-butadiene rubber.

13. The method according to claim 1, wherein the first active material further comprises a solid electrolyte.

14. The method according to claim 13, wherein the solid electrolyte is selected from the group consisting of poly(ethylene)oxide, poly(propylene) oxide, and copolymers thereof.

15. The method according to claim 1, wherein the first active material further comprises an electrolyte-supporting salt.

16. The method according to claim 15, wherein the electrolyte-supporting salt is selected from the group consisting of $LiPF_6$, $LiBF_4$, $LiClO_4$, $LiAsF_6$, $LiAlCl_4$, $Li_2B_{10}Cl_{10}$, $LiCF_3SO_3$, $Li(CF_3SO_2)_2N$, and $Li(C_2F_5SO_2)_2$.

17. The method according to claim 1, wherein the second active material comprises a cathode type active material.

18. The method according to claim 17, wherein the cathode type active material comprises a chemical compound having a formula of $LiM_xN_{1-x}O_2$, and wherein M is a first transition metal element, N is a second transition element different from M, and x is a number from 0 to 1.

19. The method according to claim 18, wherein the cathode type active material comprises a chemical compound selected from the group consisting of $LiMn_2O_4$, $LiCoO_2$, $LiCr_2O_7$, $Li_2CrO_4$, $LiNiO_2$, $LiFeO_2$, and mixtures thereof.

20. A process for producing a bipolar fuel cell electrode, comprising:
coating a first side of a collector with a first material having a characteristic which transforms the coated first side into one of an anode or a cathode after being compressed at a first pressure;
compressing the coated first side of the collector at the first pressure;
coating a second side of the collector with a second material having a characteristic which transforms the coated second side into the other one of the anode or cathode after being compressed at a second pressure that is less than the first pressure; and
compressing the coated second side of the collector at the second pressure.

21. A process according to claim 20, wherein the first material coating exhibits a porosity of about 35% to about 45% after compressing the coated collector at the first pressure.

22. A process according to claim 20, wherein the second first material coating exhibits a porosity of about 30% to about 40% after compressing the coated collector at the first pressure.

23. A bipolar fuel cell electrode produced by the process of claim 20.